

## CLAIMS

1. A sound diffuser with low frequency sound absorption, comprising:

a) a body having a front surface configured to diffuse sound waves; and

b) means incorporated into said front surface for absorbing sound waves below a desired cut-off frequency.

2. The invention of Claim 1, wherein said front surface includes a plurality of divided or non-divided parallel wells.

3. The invention of Claim 1, wherein said front surface includes a two-dimensional pattern of geometrical or irregular shape chosen from the group consisting of cylindrical, conical, pyramidal, polygonal <sup>and</sup> or rectangular.

4. The invention of Claim 3, wherein said shapes are separated by slots or holes.

5. The invention of Claim 4, wherein said incorporated means is formed in said slots or holes.

6. The invention of Claim 1, wherein said front surface comprises a compound curved shape.



14. The invention of Claim 13, wherein said absorptive material is made of a porous absorptive material chosen from the group consisting of fiber glass, mineral wool, cotton and foam.

15. The invention of Claim 7, wherein the slots are narrow enough to provide significant low frequency absorption.

16. The invention of Claim 7, wherein the holes are narrow enough to provide significant low frequency absorption.

17. The invention of Claim 15, wherein said slots have a width of 0.1 to 1 millimeter.

18. The invention of Claim 16, wherein said holes have a diameter of 0.1 to 1 millimeter.

19. The invention of Claim 1, wherein a crossover frequency is chosen below which sound absorption takes place and above which diffusion takes place in accordance with required usage.

20. A method of making an acoustical device which absorbs sound below a crossover frequency and diffuses sound above said crossover frequency, including the steps of:

a) choosing a desired crossover frequency;



23. The method of Claim 22, wherein said shapes are separated by slots or holes.

24. The method of Claim 20, wherein said front surface comprises a compound curved shape.

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